

CLASSIFICATION RESTRICTED
 CENTRAL INTELLIGENCE AGENCY
 INFORMATION FROM
 FOREIGN DOCUMENTS OR RADIO BROADCASTS

COUNTRY USSR

SUBJECT Scientific - Medicine, transplantation of organs

HOW PUBLISHED Semiweekly newspaper

WHERE PUBLISHED Moscow

DATE PUBLISHED 10 Apr 1953

LANGUAGE Russian

REPORT CD NO. []

DATE OF INFORMATION 1953

DATE DIST. 26 May 1953

NO. OF PAGES 2

SUPPLEMENT TO REPORT NO.

THIS DOCUMENT CONTAINS INFORMATION AFFECTING THE NATIONAL DEFENSE OF THE UNITED STATES WITHIN THE MEANINGS OF ESPIONAGE ACT 50 U. S. C. 91 AND 92, AS AMENDED. ITS TRANSMISSION OR THE REVELATION OF ITS CONTENTS IN ANY MANNER TO AN UNAUTHORIZED PERSON IS PROHIBITED BY LAW. REPRODUCTION OF THIS FORM IS PROHIBITED.

THIS IS UNEVALUATED INFORMATION

SOURCE Meditzinsky Rabotnik.

USSR WORK ON TRANSPLANTATION OF THE HEART

B. Danilov, Gor'kiy

N. P. Sinitsin, professor at the Gor'kiy Medical Institute, has worked for 20 years on the transplantation of hearts in vertebrate animals. He has now completed a series of lengthy and intricate experiments which demonstrate the effect of various factors in the outside environment on the successful adaptation of a transplanted heart. This adaptation process is assisted by a preliminary soaking of the donor heart in an artificial medium of a specific chemical composition at a low temperature. The condition of the central nervous system prevailing at the time of the operation has been proved to affect the adaptation process in animals that are recipients of a transplanted heart. The transplantation is more likely to succeed when the operation is done under anesthesia.

Transplantation of a heart to cold-blooded animals may be considered a problem already solved. Experiments on the transplantation of hearts to warm-blooded animals are proceeding successfully in Professor Sinitsin's laboratory. In recent years, this laboratory has conducted numerous experiments on methods of transplantation, and vital adjustment of a second heart transplanted from animals of the same species. Attempts have also been made to carry out a complete replacement of the original heart in dogs, cats, and rabbits.

Research was carried out on the possibilities of including a second heart in the systemic circulation of warm-blooded animals. A method was devised of transplanting the second heart by connecting it to the vessels in the recipient's neck.

After rigid preliminary experiments had demonstrated the complete physiological restoration of contractions of the transplanted heart and the fact that no harmful effects were exerted either on the initial heart or the recipient's organism as a whole, Professor Sinitsin started work on a long-range project.

- 1 -

CLASSIFICATION		RESTRICTED		DISTRIBUTION							
STATE	<input checked="" type="checkbox"/>	NAVY	<input checked="" type="checkbox"/>	NSRB							
ARMY	<input checked="" type="checkbox"/>	AIR	<input checked="" type="checkbox"/>	FBI							

RESTRICTED

STAT

After many years of research and experimentation, he established that the transplantation of a second heart into the neck of the recipient is of value for many pharmacological and pathophysiological investigations. Such a transplantation permits simultaneous observation and regulation of the activity of two hearts situated in one organism.

The experiments of Professor Sinitsin opened the way to a thorough study of the activity of the cardiovascular system.

It is a matter of common knowledge that a large number of pharmacologically active substances are used in medical practice, notwithstanding the fact that there is only a vague knowledge of their effects on the cardiovascular system. Professor Sinitsin's method now makes a study of these effects possible.

A heart transplanted into the neck retains its vitality for about 2 weeks, although its contractions gradually diminish in force. During this time, the vessels of the transplanted organ become connected to the vessels of the recipient by a process of natural anastomosis without obstructing their passage. The stoppage of the contractions in the transplanted heart is ascribed by the scientist to profound and gradually increasing biochemical differences between the transplanted heart and the recipient's organism.

To create conditions favorable to the adjustment of a transplanted heart, experiments were made on the transplantation of the second heart into an animal's abdominal cavity in place of a removed kidney [sic]. These experiments showed some very interesting results. Satisfactory functioning of the transplanted heart was observed; it retained its vitality for up to 4 weeks. Similar results were obtained with the transplantation of a second heart into the thoracic cavity in lieu of a removed left lung.

A satisfactory method was developed for moving a dog's own heart to a position close under the skin. This procedure made the cardio-vessels more accessible for the application of anastomoses. This method is of value not only for work on transplantation of the heart but also for studying changes in the volume of the heart by oncometric methods. A dog whose heart has been transferred to a position just under the skin does not differ in its behavior from ordinary dogs and may serve as a suitable object for conducting various physiological, pathophysiological, and pharmacological investigations.

An apparatus was constructed by Professor Sinitsin which registers with precision the contractions of a heart transferred to a position just under the skin of an animal. This scientist, persisting in his efforts, recently invented a method by which a plate made of organic glass [Plexi-glass?] is introduced into the skin next to the heart. This procedure permits a visual observation of the coronary action, enhancing the value of the method based on such a transfer of the heart.

- E N D -

- 2 -

RESTRICTED